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EXAMINER	
PERILLA, JASON M	

ART UNIT	PAPER NUMBER
2638	

DATE MAILED: 10/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/014,455	AUST ET AL.	
	Examiner	Art Unit	
	Jason M. Perilla	2638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18,20-22,24-26,28-30,32,33 and 36-43* is/are rejected.

7)☒ Claim(s) *19,23,27,31,34 and 35* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 18-43 are pending in the instant application.

Drawings

2. The replacement drawing sheets received on June 28, 2005 are accepted by the Examiner.

Response to Amendment/Argument

3. The objections set forth in the first office action are moot in view of the Applicant's amendments to the claims. New claim objections are made below.

4. Applicant's remarks regarding the rejections under 35 U.S.C. §112, first paragraph set forth in the first office action dated March 1, 2005, have been considered, but they are not persuasive. Where claims originally filed were renumbered and rewritten in the claim listing filed June 28, 2005 without amending to overcome the rejections set forth in the first office action, the rejections are made again. The Examiner insists that the specification does not provide for comparing **a PN code *length*** to a threshold for the determination of an unreliable transmission. While the PN code length may be *a determining factor in the correlation value* (which is compared to a threshold), the PN code length itself is not *enabled to be compared* directly with a threshold. The Applicant's citation to the specification at page 9, line 16 continuing to page 10, line 4 does not disclose or enable the claimed subject matter. The specification does not provide for comparing *a code length* to a threshold. Rather, a correlation value *which is indicative of a code length* is compared to a threshold.

5. Applicant's remarks regarding the rejections under 35 U.S.C. §112, second paragraph for omitting essential steps or elements have been considered, but they are not persuasive. Again, where claims originally filed were renumbered and rewritten in the claim listing filed June 28, 2005 without amending to overcome the rejections set forth in the first office action, the rejections are made again. The claims which are missing an essential step or element attempt to claim subject matter outside the scope of the invention. While the Applicant makes a reference to *Ex Parte Nolden*, 149 USPQ 378 (Board of Patent Appeals, 1965), the issue of element inter-dependency in *Nolden* is exclusive of the omission of essential steps as set forth in the first office action. The claims are rejected where they omit essential steps or elements because without the essential steps or elements, essential subject matter which *is required for the utility of the claimed invention* ***is omitted***. Therefore, the claims are indefinite because the essential subject matter is missing, and one skilled in the art is unable to determine how the claimed invention reaches the claimed result.

In claim 28 which is dependent upon claim 25, for instance, a power level for the PN coded data signal is adjusted in step (f). The Examiner points out that the adjustment of the power level of the PN coded data signal occurs at step (f) after the providing of the PN coded data signal to a correlator at step (d) and after determining a correlator value at step (e). The specification provides, among other places, on page 9, lines 2-6, that,

> "If the correction [sic] value is below the threshold, an indication is given of unreliable transmission through the channel. The power level of the date [sic] may be increased to compensation of continuation on the channel.

Alternatively, the length of the PN code may be adjusted to compensate for the continuation on the channel."

Therefore, the power level and the length of the PN code are adjusted *if* the correlation value is below the threshold. The omission of this essential element leads to claims which fail to embody the invention.

However, in the adjustment of the carrier frequencies (i.e. claim 27), according to the specification on pages 11 and 12 and in view of the flow diagram of figure 5, it is clear that the carrier frequencies may be adjusted in an iterative fashion regardless of the comparison of the correlation value to a threshold. Therefore, the rejections are withdrawn in such cases.

Finally, in claims 29 and 37, the correlation value is altered by adjusting the chip rate of the PN code *or* the carrier frequency. In such cases, the claims are rejected because, regarding the adjustment of the chip rate of the PN code, the essential step of comparing the correlation value to the threshold is omitted.

Claim Objections

6. Claims 18-43 are objected to because of the following informalities:

Regarding claim 19, the claim is objected to because the adjusting the carrier frequency to frequencies relevant for the transmission of the data signal should be conditional upon the correlation value being below the threshold.

Regarding claim 23, the claim should be dependent upon claim 43 rather than claim 40. Further, the claim is objected to for the same reasons as applied to claim 31.

Regarding claim 24, the claim should be dependent upon claim 43 rather than claim 40.

Regarding claim 25, the claim is objected to because the method steps of providing (d) and determining (e) are confused. According to the specification, the correlator (rather than the power detector) extracts the PN code and the power detector (rather than the correlator) determines transmission characteristics of the communications channel. The following proposed version of the claim is presented by the Examiner:

> 25. A method of dynamic measurement of a communication channel using a Direct Sequence Spread Spectrum (DSSS) communication system, comprising the steps of:
>
> (a) generating a Pseudo Noise (PN) code (f_0=1/T) having a length (l), where f_0 =PN code signal bandwidth, and T = PN code signal chip ~~Chip~~ rate;
>
> (b) modulating a carrier (cos. $2\pi f_c$) with the PN code, where f_C = Carrier frequency;
>
> (c) modulating the PN coded carrier with a data signal as a PN coded data signal;
>
> (d) providing the PN coded data signal to a correlator via a communication channel for extracting the PN code from the PN coded data signal ~~determining transmission characteristics of the communication channel~~; and
>
> (e) determining a correlator value ~~for extracting the PN code from the PN coded data signal~~ via a power detector for determining transmission characteristics of the communication channel from the extracted PN code, where the correlator value is a measure of attenuation loss of the communication channel.

Regarding claim 27, the following version of the claim is presented by the Examiner to make the claim more definite and to correct antecedent basis:

> 27. The method of Claim 25 further comprising the steps of:
>
> (f) adjusting carrier frequencies (f_c) in step (b) to frequencies relevant for transmission of the PN coded data signal; and

(g) measuring ~~the~~ a correlation value for each respective carrier frequency, where each ~~the~~ correlation value vs. respective carrier frequency is a measure of an attenuation loss of the communication channel.

Regarding claim 28, in line 3, "the transmitted data signal" is lacking antecedent basis.

Regarding claim 29, the claim is objected to because one skilled in the art is unable to determine if the PN code itself or the PN code signal bandwidth (f_0) is being altered.

Regarding claim 31, the claim is objected to for failing to claim that which is the invention. The addition of step (f) occurring after step (e) has no apparent purpose or significance according to the description of the invention. That is, the carrier signal is already modulated with the data in step (c), and the invention does not require the additional step (f) for any utility.

Regarding claim 33, in line 8, the correlation variable is lacking antecedent basis.

Regarding claim 34, the following version of the claim is presented by the Examiner to overcome objections to the claim:

34. A system of dynamic measurement of a communication channel using a Direct Sequence Spread Spectrum (DSSS) communication system, comprising:

(a) a code generating apparatus which generates a Pseudo Noise (PN) code signal (f_0=1/T) having a length (l), where f_0 =PN code signal bandwidth, and T = PN code signal chip ~~Chip~~ rate;

(b) a carrier modulating apparatus which modulates a carrier (cos. $2\pi f_c$) with the PN code signal where f_C = Carrier frequency;

(c) a data modulating apparatus which modulates the PN coded carrier with a data signal as a PN coded data signal;

(d) a transmitter apparatus which transmits the PN coded data signal to a correlator via a communication channel for determining transmission characteristics of the communication channel;

(e) a frequency-controlling apparatus that tunes the carrier frequency to a plurality of predetermined frequencies relevant for the transmission of the PN coded data signal;

(f) a synchronizing apparatus which determines a correlator value for each of the plurality of predetermined frequencies ~~frequency for extracting the PN code from the PN coded data signal~~; and

(g) a power detector apparatus which keeps track of the correlator values and thereby determines the attenuation loss of the communication channel.

Regarding claim 35, in line 3, "correlation variable" should be replaced by –correlation value--, and the claim is objected to because it is dependent upon claim 33 rather than 34.

Regarding claim 37, the claim is objected to because one skilled in the art is unable to determine if the PN code itself or the PN code signal bandwidth (f_0) is being altered. Further, in line 2, "the PN code" should be replaced by –the PN code signal--.

Regarding claim 38, in line 1, "the PN code" should be replaced by –the PN code signal--.

Regarding claim 39, in line 2, "the PN code" should be replaced by –the PN code signal--.

Regarding claim 40, the following version of the claim is presented by the Examiner to overcome objections to the claim:

40. A system of dynamic measurement of a communication channel using Direct Sequence Spread Spectrum (DSSS) communication system, comprising:

(a) a code generating apparatus which generates a Pseudo Noise (PN) code signal (f_0=1/T) having a length (l), where f_0 =PN code signal bandwidth, and T = PN code signal chip ~~Chip~~ rate;

(b) a carrier modulating apparatus which modulates a carrier (cos. $2\pi f_c$) with the PN code signal where f_C = Carrier frequency;

(c) a data modulating apparatus which modulates the PN coded carrier with a data signal as a PN coded data signal;

(d) a transmitter apparatus which transmits the PN coded data signal to a correlator via a communication channel for determining transmission characteristics of the channel; and

(e) a power detecting apparatus which select a Signal to Noise Ratio as a threshold for reliable communication in the communication channel; determines a correlator value ~~for extracting the PN code from the PN coded data signal~~, and compares the correlation value of the PN code to the threshold value to determine if the correlation value is above or below the threshold; where a correlation value below the threshold is indicative of unreliable transmission through the communication channel and a correlator value above the threshold is indicative of reliable transmission through the communication channel.

Regarding claim 40, the following version of the claim is presented by the Examiner to overcome objections to the claim:

41. A method of dynamic measurement of a communication channel using Direct Sequence Spread Spectrum (DSSS) communication system, comprising the steps of:

(a) generating a Pseudo Noise (PN) code signal (f_0=1/T) having a length (l), where f_0 =PN code signal bandwidth, and T = Chip rate;

(b) modulating a carrier (cos. $2\pi f_c$) with the PN code signal, where f_C = Carrier frequency;

(c) modulating the PN coded carrier with a data signal as a PN coded data signal;

(d) providing the PN coded data signal to a correlator via a communication channel for determining transmission characteristics of the communication channel;

(e) determining a correlator value from the PN coded data signal;

~~(e)~~(f) selecting a Signal to Noise Ratio as a threshold via a power detecting apparatus ~~for:~~,

~~(i) determining a correlator value for extracting the PN code from the coded data signal;~~

~~(ii)~~(g) comparing the correlation value ~~of the PN code~~ to the threshold value; and

~~(iii)~~(h) determining if the correlation ~~variable~~ value is above or below the threshold, where a correlation value below the threshold is indicative of unreliable transmission through the communication channel and a correlator value above the threshold is indicative of reliable transmission through the communication channel.

Regarding claim 42, the following version of the claim is presented by the Examiner to overcome objections to the claim:

42. A system of dynamic measurement of a communication channel using Direct Sequence Spread Spectrum (DSSS) communication system, comprising:

(a) a code generating apparatus which generates a Pseudo Noise (PN) code signal (f_0=1/T) having a length (l), where f_0 =PN code signal bandwidth, and T = PN code signal chip ~~Chip~~ rate;

(b) a carrier modulating apparatus which modulates a carrier (cos. $2\pi f_c$) with the PN code where f_C = Carrier frequency;

(c) a data modulating apparatus which modulates the PN coded carrier signal with a data signal as a PN coded data signal;

(d) a transmitter apparatus which transmits the PN coded data signal to a correlator via a communication channel for determining transmission characteristics of the channel;

(e) a correlator apparatus to determine a correlator value from the PN coded data signal;

~~(e)~~(f) a ~~selecting apparatus via~~ power detecting apparatus which selects a Signal to Noise Ratio as a threshold for reliable communication in the channel ~~to:~~;

~~(i) determine a correlator value for extracting the PN code from the PN coded data signal;~~

~~(ii)~~(g) a comparing apparatus to compare the correlation value ~~of the PN code~~ to the threshold value~~;~~ and determine if the correlation value is above or below the threshold; where a correlation value below the threshold is indicative of unreliable transmission through the communication channel and a correlator value above the threshold is indicative of reliable transmission through the communication channel.

~~(ii) determine if the correlation value is above or below the threshold; where a correlation value below the threshold is indicative of unreliable transmission through the communication channel and a correlator value above the threshold is indicative of reliable transmission through the communication channel.~~

Regarding claim 43, the following version of the claim is presented by the Examiner to overcome objections to the claim:

43. A medium, executable on a computer system for dynamic measurement of a communication channel using a Direct Sequence Spread Spectrum (DSSS) communication system, comprising:

(a) program instructions for generating a Pseudo Noise (PN) code signal (f_0 =1/T) having a length (l), where f_0 =PN code signal bandwidth, and T = PN code signal chip ~~Chip~~ rate;

(b) program instructions for modulating a carrier (cos. $2\pi f_c$) with the PN code signal, where f_C = Carrier frequency;

(c) program code for modulating the PN coded carrier with a data signal as a PN coded data signal;

(d) program instructions for providing the PN coded data signal to a correlator via a communication channel for determining transmission characteristics of the communication channel; and

(e) program instructions for determining a correlator value ~~for extracting the PN code from the PN coded data signal~~, where the correlator value is measure of attenuation loss of the communication channel.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 24, 32, and 39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 24, the claim is not enabled because the specification does not provide for comparing **a PN code *length*** to a threshold for the determination of an unreliable transmission. While the PN code length may be a determining factor in the correlation value (which is compared to a threshold), the PN code length itself is not enabled to be compared directly with a threshold.

Regarding claim 32, the claim is rejected for the same reasons as applied to claim 24 above.

Regarding claim 29, the claim is rejected for the same reasons as applied to claim 24 above.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 20-22 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01.

Regarding claim 20, the omitted elements are: the elements of claim 18. Before the power level is adjusted, the correlation value must be found to be below the Signal to Noise Ratio threshold. According to the specification, the adjustment of the power level would occur only if unreliable transmission through the communication channel was detected.

Regarding claim 21, the omitted elements are: the elements of claim 18. Before the chip rate of the PN code is adjusted, the correlation value must be found to be below the Signal to Noise Ratio threshold. According to the specification, the adjustment of the PN code or the carrier frequency would occur only if unreliable transmission through the communication channel was detected.

Regarding claim 22, the omitted elements are: the elements of claim 18. Before the length of the PN is adjusted, the correlation value must be found to be below the Signal to Noise Ratio threshold. According to the specification, the adjustment of the PN code would occur only if unreliable transmission through the communication channel was detected.

11. Claims 28-30 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01.

Regarding claim 28, the omitted steps are: the steps of claim 26. That is, the steps of selecting a Signal to Noise Ratio as a threshold, comparing the correlation value to the threshold, and determining if the correlation value is above or below the threshold are omitted.

Regarding claim 29, the omitted steps are: the steps of claim 26. That is, the steps of selecting a Signal to Noise Ratio as a threshold, comparing the correlation value to the threshold, and determining if the correlation value is above or below the threshold are omitted.

Regarding claim 30, the omitted steps are: the steps of claim 26. That is, the steps of selecting a Signal to Noise Ratio as a threshold, comparing the correlation value to the threshold, and determining if the correlation value is above or below the threshold are omitted.

12. Claim 33 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 33, the claim is indefinite because one skilled in the art is unable to definitely determine how steps (d) and (f) are related and how steps (e) and (i) are related. Steps (d) and (f) taken together in the same claim make the claim indefinite because they are functionally the same step. Otherwise, the claim is not enabled, because the specification does not provide for steps (d) and (f) to both occur. Likewise, steps (e) and (f) are functionally the same step.

13. Claims 36-38 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01.

Regarding claim 36, the omitted elements are: the elements of claim 35. Before the power detector adjusts the power level of he data signal, the correlation value must be found to be below the Signal to Noise Ratio threshold. According to the specification, the adjustment of the power level would occur only if unreliable transmission through the communication channel was detected.

Regarding claim 37, the omitted elements are: the elements of claim 35. Before the chip rate of the PN code or the carrier frequency is adjusted, the correlation value must be found to be below the Signal to Noise Ratio threshold. According to the specification, the adjustment of the PN code would occur only if unreliable transmission through the communication channel was detected.

Regarding claim 38, the omitted elements are: the elements of claim 35. Before the length of the PN is adjusted, the correlation value must be found to be below the Signal to Noise Ratio threshold. According to the specification, the adjustment of the PN code would occur only if unreliable transmission through the communication channel was detected.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claims 25, 26, 28, 33, and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilhousen et al (US 5056109, hereafter "Gilhousen") in view of Walley et al (US 6744808; hereafter "Walley").

Regarding claim 25, Gilhousen discloses a method of dynamic measurement of a communication channel using a Direct Sequence Spread Spectrum (DSSS) communication system, comprising the steps of: (a) generating a Pseudo Noise (PN) code (f_0 =1/T) having a length (l), where f_0 =PN signal bandwidth, and T = Chip rate

(see below); (c) modulating a data signal (fig. 4, ref. 84) as a PN coded data signal (col. 14, lines 10-15); (d) providing the PN coded data signal to a correlator (fig. 3, ref. 56; col. 12, lines 50-55) via a communication channel (fig. 1) for determining transmission characteristics of the communication channel (col. 4, lines 23-33); and (e) determining a correlator value or power measurement (col. 12, lines 60-68) via a power detector (fig. 3, ref. 60), where the correlator value is a measure of attenuation loss of the communication channel (col. 4, lines 44-50; col. 5, lines 7-13). Regarding step (a), in the transmitter of Gilhousen illustrated in figure 4, data provided by the USER DIGITAL BASEBAND (82) is spread spectrum modulated by the TRANSMIT MODULATOR (84). Gilhousen does not explicitly disclose that the transmit modulator generates a PN code for spread spectrum modulation of the data from the user digital baseband. However, one skilled in the art appreciates that a PN code is required for the disclosed spread spectrum modulating of the data. Further, at the side of the receiver illustrated in figure 3, the DIGITAL DATA RECEIVER (56) correlates and demodulates the PN coded data signal (col. 12, lines 50-55). The digital data receiver (56) of the receiver of figure 3 is illustrated in detail in figure 6 wherein a PN GENERATOR (114) is used to generate the PN code to despread the PN coded data signal. Therefore, it is strongly implied and clearly obvious to one having skill in the art that, in the invention of Gilhousen, a PN code is generated in the transmitter for use with the transmit modulator to modulate the data with the PN code.

Further regarding claim 25, Gilhousen discloses that the invention is used in a 850Mhz cellular frequency band (col. 3, lines 20-30) but does not explicitly disclose that

a carrier is modulated with the PN code. However, Walley teaches an exemplary embodiment of a spread spectrum modulator according to figure 2. Walley teaches data (203) being spread spectrum modulated by a PN code (209) using an EXOR gate (207) and a carrier frequency (215) for amplification and transmission (217, 219). One skilled in the art is aware that, for transmission of a data signal by spread spectrum techniques, the data must be modulated with a PN code *and* by a carrier. Without the modulation by a carrier (i.e. 850Mhz in the case of Gilhousen), the transmission could not occur because a carrier is required for propagation of the data signal over a communications channel. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize a carrier to modulate the PN coded data signal as explicitly taught by Walley in the transmit modulator of Gilhousen because the carrier modulation would enable the signal to be transmitted or "carried" wirelessly over a communications channel.

Regarding claim 26, Gilhousen in view of Walley disclose the limitations of claim 25 as applied above. Further, Gilhousen discloses (f) selecting a Signal to Noise Ratio or power level (fig. 6, "POWER LEVEL SET FROM PROCESSOR) via the power detector (fig. 3, ref. 60) as a threshold for reliable communication in the communication channel; (g) comparing (fig. 6, ref. 120) the correlation value to the threshold in the power detector; and (h) determining if the correlation value is above or below the threshold via the power detector, where a correlation value below the threshold is indicative of unreliable transmission through the communication channel (col. 4, lines 23-44).

Regarding claim 28, Gilhousen in view of Walley disclose the limitations of claim 25 as applied above. Further, Gilhousen discloses (f) adjusting a power level for the PN coded data signal to compensate for attenuation of the transmitted data signal (col. 5, lines 5-65; col. 6, line 62 – col. 7, line 6).

Regarding claim 33, Gilhouse in view of Walley disclose the limitations of claim 25 as applied above. Further, Gilhouse in view of Walley disclose the remaining limitations of the claim as applied to claim 26 above.

Regarding claim 40, the limitations of the claim are provided by Gilhouse in view of Walley as applied to claims 25 and 26 above.

Regarding claim 41, the limitations of the claim are provided by Gilhouse in view of Walley as applied to claims 25 and 26 above.

Regarding claim 42, the limitations of the claim are provided by Gilhouse in view of Walley as applied to claims 25 and 26 above.

16. Claims 43, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilhousen in view of Walley, and in further view of Dent (US 6944206).

Regarding claim 43, the limitations of the claim are provided by Gilhouse in view of Walley as applied to claims 25 above. However, Gilhouse in view of Walley do not disclose that the invention is a implemented by program instructions executable on a computer system. However, Dent teaches that communication system may be implemented using a digital signal processor (DSP) running software (col. 9, lines 55-65; col. 20, lines 1-20). One skilled in the art is aware that implementing a system by software provides for many advantages including lower cost and ease of adaptability.

Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to implement the communications system as described by Gilhousen in view of Walley as computer readable program code as taught by Dent because it would be cheaper and more adaptable.

Regarding claim 18, Gilhouse in view of Walley, and in further view of Dent as disclose the limitations of claim 43 as applied above. Further, Gilhouse discloses the remaining limitations of the claim as applied to claim 25 above.

Regarding claim 20, Gilhouse in view of Walley, and in further view of Dent as disclose the limitations of claim 43 as applied above. Further, Gilhouse discloses the remaining limitations of the claim as applied to claim 28 above.

Allowable Subject Matter

17. The indication of allowable subject matter is made regarding claims 34 and 35.

18. The following is a statement of reasons for the indication of allowable subject matter:

Claims 34 and 35 are indicated to contain allowable subject matter because the prior art of record does not disclose or obviate a spread spectrum communication system where the transmitter carrier frequency is varied among a plurality of predetermined carrier frequencies and a correlator is used to determine a correlator value for each of the frequencies to find the attenuation loss of the communications channel.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Perilla whose telephone number is (571) 272-3055. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason M. Perilla
October 2, 2005

jmp

KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER